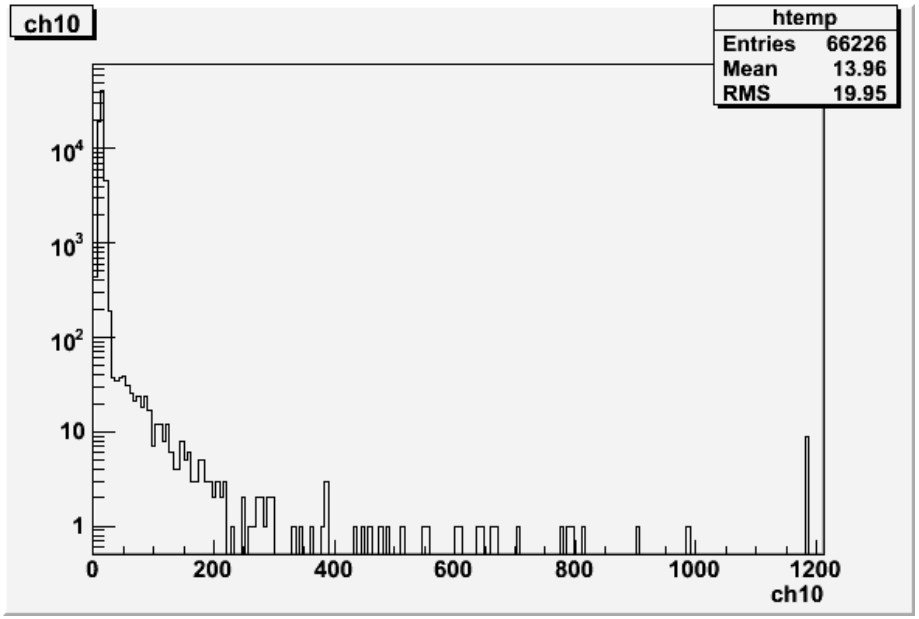
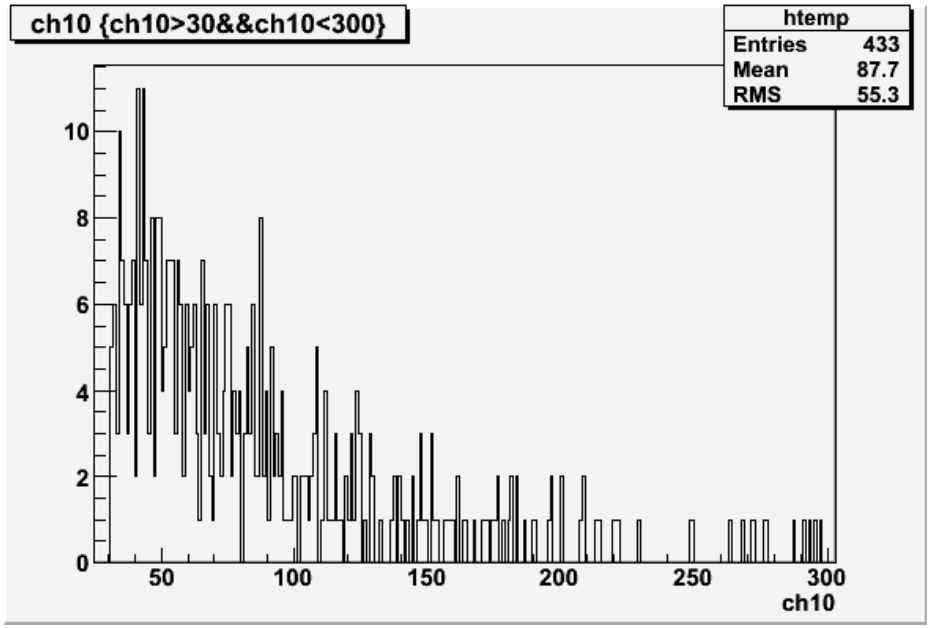
Measurement of scintillation light

Measurement with track trigger only across few pads, few others have no PIM track at the same time (no overlap with trigger counters):





Pad with no track across it. Noise + scint light. All track crosses N=66226

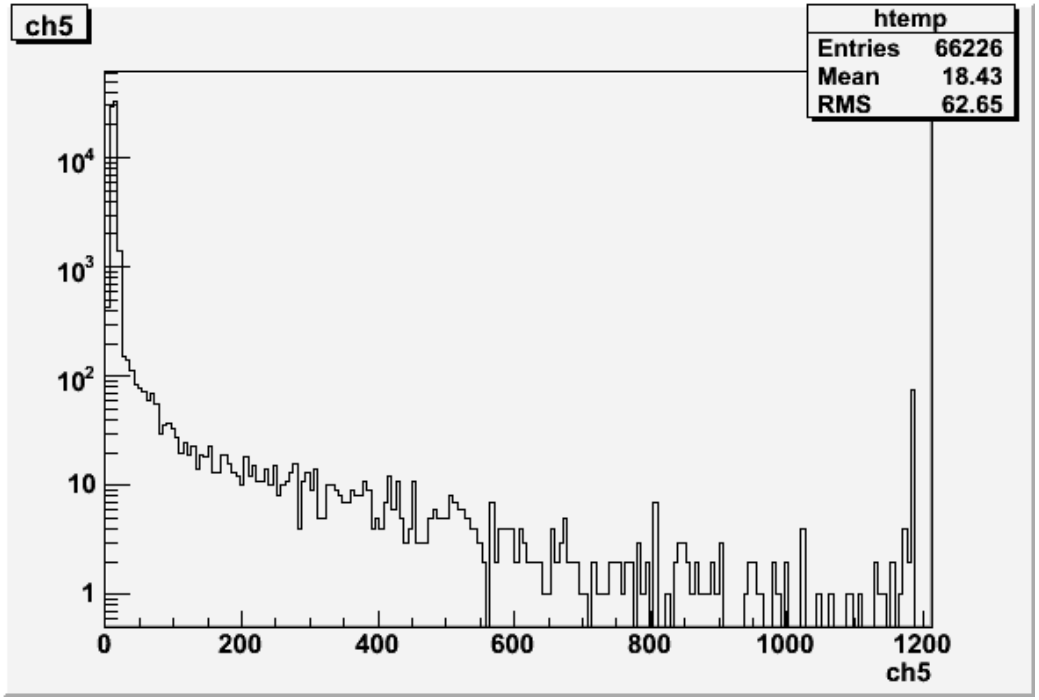
Pure light signal between chan. 30 and 300. N_scint=433

This is first estimate:

Probability to get electron per track=433/66226=0.0065

2nd test:

Another pad with scint. Light **and MIP track**



Assume all signals with >300 correspond to MIP across this pad. N_mip=303 events

Look at other 3 pads (like ch10) where for **sure** was no any MIP at all – scint. counters were far away

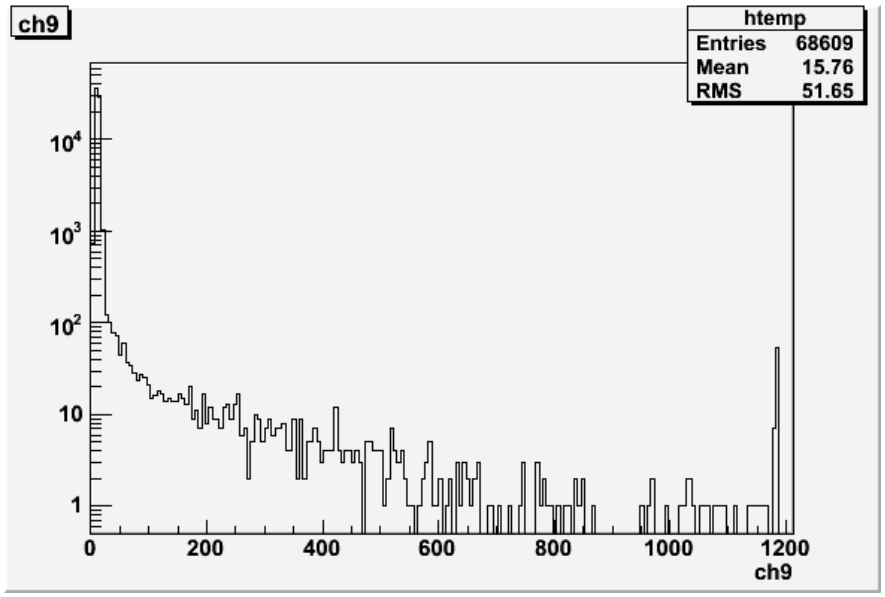
For 3 pads with no tracks, we find only 14 scint. signals.

Probability to get light per pad will be (14/303)/3 pads= 0.0066

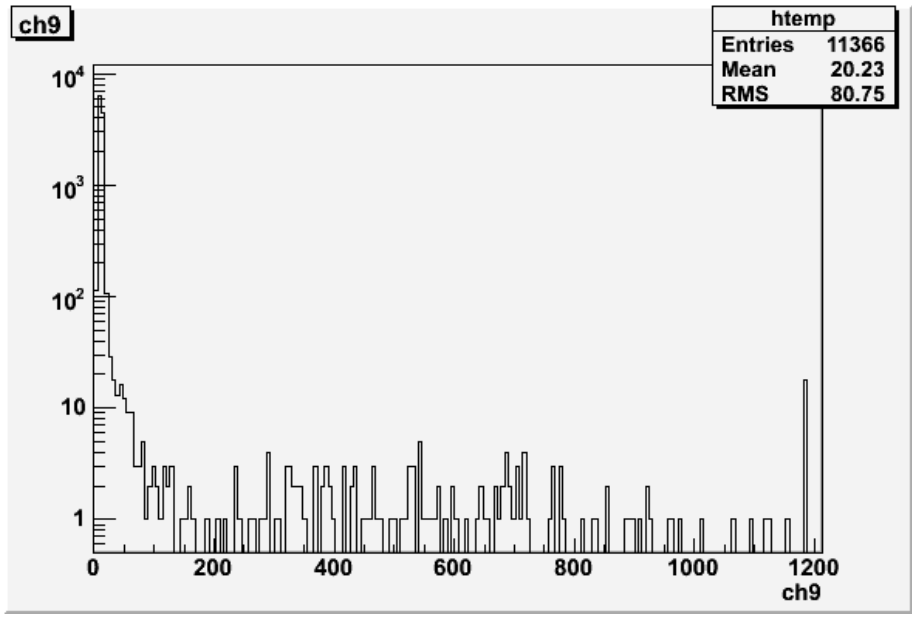
Probability to get electron from scintillation from track close to the pad is **0.006-0.007**. This is the **largest** light signal.

Other tracks will give smaller probability

New resistor chain.

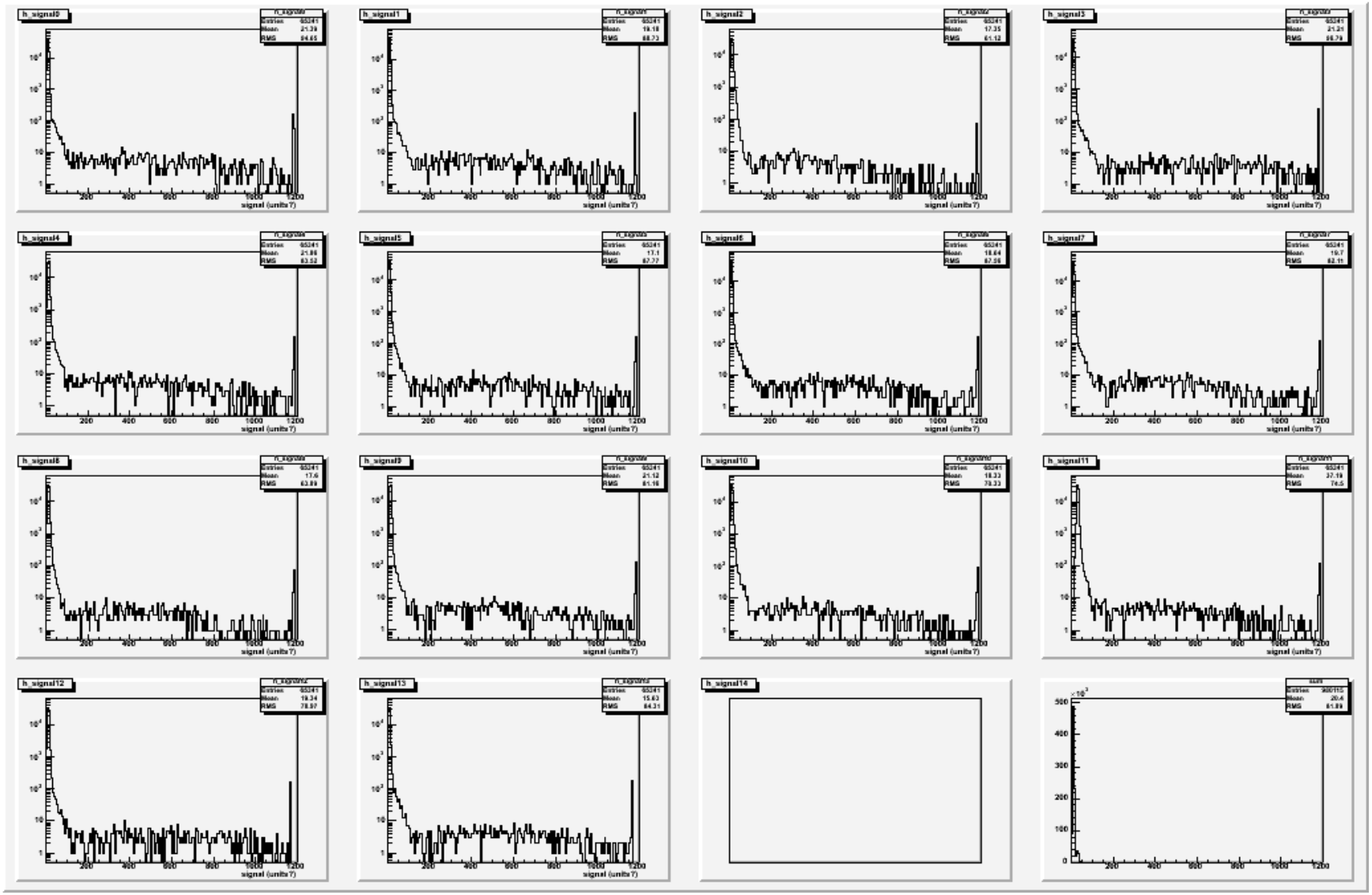


Zero voltage bias



Bias = +100 V (but low statistics)

Our **trouble maker** for **big** trips was stack South 4. With new resistor chain change voltage to dV=460V (all other were at 480 V):



Works stable at this dV, with large signal

HBD West is tested and ready to go to BNL